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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,969	08/30/2001	Kay-Yut Chen	10004567-1	2217

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EXAMINER
ROBERTSON, DAVID

ART UNIT	PAPER NUMBER
3623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	09/944,969	CHEN, KAY-YUT
	Examiner	**Art Unit**	
	Dave Robertson	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This is a Non-final office action over pending claims 1-21.

Response to Amendment

2.   In the Reply of 6/11/2007, Applicant amends claim 20 to remove a phrase

previously rejected under 35 USC 112, first paragraph. The amendment is sufficient to

overcome the rejection, which is hereby withdrawn. In the context of parent claim 18,

the amendment does not constitute new scope.

Oath/Declaration

3.   The Declaration under 37 CFR 1.131 filed with the Reply of 6/11/2007 claiming

priority over the effective date of Mehta (12/18/2000), as evidenced by Exhibits A-E, an

internal HP Invention Disclosure and supporting software documentation of the "MUMS"

software package having substantially the features of the invention as disclosed and

claimed, is effective to overcome rejection of Mehta (US Pat. Pub. 2002/0169658) under

35 USC 103(a) for claims 1, 2, 4-7, 9-11, 13-15, and 17-21; however, priority of claims

3, 8, 12, and 16 (directed to the compilation of scripts before execution and to

automated agents) over the date of Mehta (12/18/2000) has not been established.

       Supporting evidence includes a MUMS (Multi-User Multi-Stage software system)

Script Users Guide, a MUMS Installation and Maintenance Guide, and a paper by

Charness and Chen (inventor) entitled "Minimum Advertised-Price Policy Rules and

Retailer Behavior: an Experiment by Hewlett-Packard" (Interfaces, v2, n35, September-

October, 2002), the declaration asserting priority to the effective date of Mehta by virtue

of the date asserted for the filing of the internal HP invention disclosure (Exhibit A:

6/12/2000) and the accompanying documentation.

4.   The Declaration under 37 CFR 1.132 filed with the Reply of 6/11/2007 is a

sufficient response to the Rule 1.105 Request for Information made in the office action

of 2/23/2007.

Applicant submits in response to the Rule 1.105 Request for information on a)

disclosure to Stanford University graduate students and b) collaboration with Caltech

Professor Charlie Plott, that the technical details of the MUMS system were not

disclosed to Stanford University graduate students taking part in experiments using

MUMS, and that early development of a MUMS prototype written by a Caltech student

as part of collaboration with Professor Charlie Plot of Caltech consisted of a student

coding an early version of MUMS software under the supervision of the inventor.

Applicant further submits that no documentation relating to this earlier work is readily

available after reasonable search.

5.   The following is a Summary of Declarations filed by Applicant under 37 CFR

1.131 with regard to establishing priority of invention over prior art having earlier

effective filing dates than the instant application. The purpose is to summarize the

status of claims and priority dates for the invention with regard to effective dates of prior

art currently applied or eligible for application in the prosecution of the invention:

          i.   Declaration filed 2/6/2006 under 37 CFR 1.131 claiming priority of

          invention over Adler (US Pat. Pub. 2002/0169658) to overcome effective date of

Adler (3/8/2001), evidenced by <u>Charness and Chen</u> (inventor) entitled "Minimum

Advertised-Price Policy Rules and Retailer Behavior: an Experiment by Hewlett-

Packard" (Interfaces, v2, n35, September-October, 2002), asserted to have been

published prior to the effective date of Adler.

Charness and Chen report having conducting a first set of sessions in

September, 1999, and a second set of session using Stanford University

graduate students in February, 2000 (Affadavit, page 5; Charness and Chen,

page 65), within which is a statement by Mr. Safai of the Decision Technology

Dept. of HP Labs of having transferred "the work described in the paper...to and

adopted by the Consumer Product Organization of HP [with] major policy

decisions made based on the information provided by Drs. Chen and Charness'

research (Affadavit, page 13; Charness and Chen, page 73).

The Declaration filed 2/6/2006 was not considered effective to overcome

Adler (see page 2, Final Office Action of 2/28/2006).

ii.   Declaration filed 6/5/2006 under 37 CFR 1.131 claiming priority of

invention over <u>Adler</u> (US Pat. Pub. 2002/0169658) to overcome effective date of

Adler (3/8/2001), evidenced by Exhibits A-E, an internal HP Invention Disclosure

and supporting software documentation of the "MUMS" software package having

substantially the features of the invention as disclosed and claimed.

Supporting evidence included a MUMS (Multi-User Multi-Stage software

system) Script Users Guide, a MUMS Installation and Maintenance Guide, and a

paper by <u>Charness and Chen</u> (inventor) entitled "Minimum Advertised-Price

Policy Rules and Retailer Behavior: an Experiment by Hewlett-Packard"

(Interfaces, v2, n35, September-October, 2002), the declaration asserting

conception and reduction to practice prior to the effective date of Adler, March 8,

2001.

  <u>The Declaration filed 6/5/2006 was not considered effective</u> to overcome

Adler (page 2, Non-final Office Action (after RCE) of 7/27/2006) because *inter*

alia it did not provide element-by-element analysis supporting evidence of

conception and reduction to practice of presented claims.

iii. <u>Supplemental Declaration filed 12/1/2006 under 37 CFR 1.131</u> claiming

priority of invention over <u>Adler</u> (US Pat. Pub. 2002/0169658) to overcome

effective date of Adler (3/8/2001), evidenced by Exhibits A-E, an internal HP

Invention Disclosure and supporting software documentation of the "MUMS"

software package having substantially the features of the invention as disclosed

and claimed, and providing element-by-element analysis supporting evidence of

conception and reduction to practice of claim 1.

  <u>The Supplemental Declaration filed 12/1/2006 was considered effective</u> to

establish priority over Adler (page 2, Non-final Office Action of 2/23/2007) <u>for</u>

<u>claim 1 and certain claims dependent on or substantially similar to claim 1,</u>

<u>namely, claims 1, 2, 4-7, 9-11, 13-15, and 17-21</u>; however, priority of claims 3, 8,

12, and 16 (directed to the compilation of scripts before execution and to

automated agents) over the date of Adler (3/8/2001) was not established (Non-

final Office Action of 2/23/2007, page 2).

6.   In summary, Declarations filed under 1.131 and 1.132 to date support a finding of

priority over prior art having an effective date on or after December 1, 2000, with

respect to with respect to claims 1, 2, 4-7, 9-11, 13-15, and 17-21. Evidence and   .

assertions of experimental work conducted between September 1999, and February

2000, and even earlier development (Caltech, 1996) for proof of concept suggest earlier

dates of conception; however, the earliest date demonstrated with respect to the subject

matter of claims 1, 2, 4-7, 9-11, 13-15, and 17-21 is 12/1/2000. The differential subject

matter of claims 3, 8, 12, and 16 is afforded the filing date of the present invention of

8/30/2001.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-21 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chaturvedi et al (with Richard White, "Synthetic Economies: The Application of

Distributed Interactive Computing Environments for Policy and Management Decision

Making", Institute for Defense Analysis, September 1997, hereinafter "Chaturvedi/IDA";

with Mehta, "Simulations in economics and management. Communication of the ACM,

March 1999, hereinafter "Chaturvedi/ACM") and further in view of Honarvar et al (US

6,405,173), Sugges ("The Use of Computerized Business Games to Simulate business

Behavior Under Different Policies", IEEE Winter Simulation Conference, 1979), and

Fischbacker ("z-Tree--Zurich Toolbox for Readymade Economic Experiments -

Experimenter's Manual", Institute for Empirical Research in Economics, University of

Zurich, September 1999).

Chaturvedi (/ACM and /IDA) disclose the SEAS (Synthetic Economy for Analysis

and Simulation) methods and system developed at Purdue University for interactive

modeling and simulation of business policy management and economic behavior,

mimicking real-time markets in a laboratory simulation populated by agents human and

artificial. Examiner notes that Chaturvedi is a named inventor on the patent to Mehta et

al (US Pat. 6,931,365) as cited and previous applied but disqualified by Applicant's most

recently filed Declaration under 37 CFR 1.131. *Mehta et al* refers expressly to a "synthetic environment for analysis and simulation," with claims directed to such; however, Mehta et al does not explicitly, by name, reference the work of "SEAS". However the strong correlation between the "SEAS" literature cited herein, and the disclosure by Mehta et al, there is not sufficient evidence in the patent or application file to construe Mehta et al as a detailed "product description" of the earlier disclosed SEAS synthetic environment for analysis and simulation system.

Honarvar discloses automated methods for simulation and analysis of economic outcomes of management decisions to improve profitability and maximize customer value, including analysis and simulation of policy decisions for financial services, telephone utility companies, banks, and other business types.

Suggess teaches early recognition in the art for simulating business behavior using computerized games to assess economic impact and behavioral outcomes of players under different business policies and Fischbacker discloses a script-based, customizable, and interactive computerized economic/business gaming tool.

Specifically, with respect to the claims of the instant application:

Claim 1

Chaturvedi teaches defining a plurality of players including an associated set of rules defining a possible decision space (/ACM, page 60: "buyers, sellers, regulators..."); an information set (/ACM, page 60: "customizing the database"); an outcome function and a payoff function which determine the economic impact of the business policies defined by the rules (/IDA, Appendix A); however, Chaturvedi does not

expressly teach rules for players defined by a decision-making process tree; nor does

Chaturvedi expressly teach executing the simulation using a scripting language.

It was old and well known in the art of computer programming, specifically logic

programming for automated decision-making making systems, to use decision-trees to

define rules, the familiar if-then-else programming construct being a form of a decision-

tree definition of a rule. Honarvar teaches player (client) rules defined by decision trees

(see Figures 6 and 10 and related discussion) defining client strategies for the business

simulation. It would have been obvious to one of ordinary skill in the art at the time of

the invention to define rules for players using such means as the decision-tree, readily

programmable with a familiar programming construct as this would have provided a

flexible and readily programmable means for defining simple or arbitrarily complex rules

for the defined players of the economic simulation.

It was also old and well known in the art of computer programming, specifically in

the art of programming for automated economic games simulation, to use a scripting

language to define and execute the simulation. In an article by Chen and Wu

("Computer Games and Economics Experiments," HP Laboratories, November, 2002)

the authors state that "the idea of script languages for particular games is not

new…script languages can also be found in commercial computer games to allow

customization of computer behavior," (page 3, left, 4th paragraph) and refer to scripting

languages having been used by George (1990) and Donninger (1996). Scripting

languages generally, have long been known to provide adaptability and ease of

implementation for programmers in highly dynamic and customizable programming

environments (see page 71, "Script Doctoring" and "Ultimate Adaptability", by Jepsen, "How Programming Languages Evolve", IT Pro, November/December, 1999).

Specifically in the art of the present invention, <u>Sugges</u> teaches computerized *business* games used as a research tool to determine how businesses respond to corporate and governmental policies in the context of economies, and Fischbacker teaches the use of a scripting language in a customizable, interactive computerized business game. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Chaturvedi as a scripted simulation using the suggestion of Sugges and Fischbacker, as this would have provided a well known means to change the "operating functionality at run-time", i.e. customizability, thereby realizing the "highly re-configurable" software environment (column 7 from line 55) envisioned by Chaturvedi.

Claims 2 and 3

Chaturvedi teaches a simulation environment for humans and/or automated agents and, as with the present disclosure, does not restrict its use to exclusively human players (/ACM, page 60).

Claim 4

Chaturvedi teaches modifying the set of rules for one or more players and teaches or suggests repeating steps b) to c) (of the method of claim 1 as above).

Claim 5

Chaturvedi teaches providing calibration data for defined players based on empirical sales information (/ACM, page 60, "calibrating the artificial agents' [the defined

players] parameters to match that of the real consumers" implying a calibration from

empirical sales information based on consumers).

Claim 6

Chaturvedi teaches a plurality of scenarios defining variations on the set of rules

associated with the one or more players (), and generating scripts corresponding to the

player definition variations.

Claim 7 and 8

In view of the discussion of scripts above for claim 1, Chaturvedi teaches or

suggests dynamically assembled simulations based on participant's profiles or on

demand, thereby also suggesting "on-the-fly execution" (i.e. interpreted) scripts.

Claim 9

Chaturvedi expressly teaches rules associated with at least one players defining

at least one business policy.

Claims 10-17 recite automated apparatus for carrying out the methods of

claims 1-9 and are thus similarly rejected for reasons given above.

Claims 18 -20

Chaturvedi teaches or suggests the elements of claim 1 recited in claim 18 as described above for claim 1, and further Chaturvedi teaches a method of evaluating the actions of a human player within a decision environment with other human and/or automated players, inherently determining the players behavioral outcome (the player's actions) resulting from execution of the "codified script", the outcome measured by costs, profits, etc, i.e. economic states.

Claim 21

Chaturvedi teaches providing calibration data for defined players based on historical data and producing calibration data based on the historical data, wherein the codified script is translated from the definitions and the calibration data (see /ACM, page 60).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Robertson whose telephone number is 571-272-8220. The examiner can normally be reached on 8:15am to 5:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

dcr

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